

# **CABINET HAVING AN ASSEMBLING STRUCTURE**

## **BACKGROUND OF THE INVENTION**

### 1. Field of the Invention

The present invention relates to a cabinet, and more  
5 particularly to a cabinet having a structure to be easily assembled by  
the users themselves.

### 2. Description of the Prior Art

Typical cabinets, particularly the metal cabinets comprise a  
parallelepiped structure formed by a bottom plate, two side plates,  
10 one rear plate, a top plate, and two doors open ably attached to the  
front portion of the side and top and bottom plates, and one or more  
shelves selectively attached between the side plates.

The side and top and bottom plates of the typical cabinets are  
normally welded together or solidly secured together such that the  
15 typical cabinets comprise a large volume that is adverse for storing  
and transportation purposes. The typical metal cabinets may not be  
assembled by the users themselves.

The present invention has arisen to mitigate and/or obviate the  
afore-described disadvantages of the conventional cabinets.

## 20 **SUMMARY OF THE INVENTION**

The primary objective of the present invention is to provide a  
cabinet including a structure to be easily assembled by the users  
themselves, to allow the cabinet to be disassembled to compact  
folding structure or a compact volume that is excellent for storing  
25 and transportation purposes.

In accordance with one aspect of the invention, there is  
provided a cabinet comprising two side plates each including a

lower portion having a channel formed therein, at least one rear plate including a lower portion having a channel formed therein, an upper plate secured on top of the side plates and the rear plate, an upper and a lower beams secured between front portions of the side plates respectively, and a bottom plate including two side flanges and a rear flange extended downwardly therefrom and engageable into the channels of the side plates and the rear plate, to latch and secure the bottom plate to the side plates and the rear plate.

Each of the side plates includes a front and a rear posts each having a first panel perpendicular to the side plates and a second panel parallel to the side plates respectively. Each of the bottom plate includes four corner notches to receive the front and the rear posts of the side plates respectively.

Each of the first panels of the front and the rear posts of the side plates includes a plurality of slots formed therein, the cabinet further includes a plurality of hooks engaged to the slots respectively, and at least one shelf selectively engaged and supported on the hooks respectively.

Each of the rear posts of the side plates includes at least one groove formed therein, the rear plate includes at least one ear extended therefrom to engage into the groove of each of the side plates, and to latch the rear plate between the side plates.

Each of the upper and the lower beams includes two extensions extended therefrom and engaged with and secured to the front posts, to secure the upper and the lower beams between the side plates. The lower beam includes a fence extended upwardly therefrom, the bottom plate includes a front flange extended downwardly

therefrom and engageable with the fence of the lower beam, to latch and secure the bottom plate to the lower beam.

Each of the side plates and the rear plate includes a flap secured thereto to define the channel thereof respectively. Each of the flaps includes a lower segment secured to the side plates and the rear plate to define the channel between the flaps and the side plates and the rear plate respectively.

Each of the flaps includes at least one opening formed therein, each of the side flanges and the rear flange of the bottom plate includes at least one catch extended therefrom to engage into the opening of the flaps respectively, and to solidly secure the side flanges and the rear flange of the bottom plate to the side plates and the rear plate respectively.

A track may further be provided and secured on top of the lower beam, and two sliding door panels slidably engaged on the track. The rear plate includes a lever provided on top thereof, the upper plate includes at least one flap extended downwardly therefrom to form a space therein, and to receive the lever of the rear plate.

A drawer may further be provided and slidably received therein. The side plates includes a rail secured thereto, and a sliding member slidably received in the rail respectively and secured to the drawer, to slidably support the drawer to the rails.

Further objectives and advantages of the present invention will become apparent from a careful reading of the detailed description provided herein below, with appropriate reference to the accompanying drawings.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is a perspective view of a cabinet in accordance with the present invention;

FIG. 2 is an exploded view of the cabinet;

5        FIGS. 3, 4, 5, 6 are partial exploded views illustrating the assembling operation of the cabinet;

FIG. 7 is a top plan view of the cabinet, having an upper plate removed from the cabinet to show the inner structure of the cabinet;

FIG. 8 is a partial cross sectional view taken along lines 8-8 of  
10    FIG. 1;

FIGS. 9, 10 are enlarged partial cross sectional views of the cabinet;

FIG. 11 is a perspective view illustrating the other arrangement of the cabinet;

15        FIGS. 12, 13, 14 are partial exploded views of the cabinet as shown in FIG. 11;

FIG. 15 is an enlarged partial plan schematic view illustrating the coupling of the side and rear plates of the cabinet;

FIGS. 16, 17, 18 are partial exploded views of the cabinet as  
20    shown in FIGS. 11-13; and

FIGS. 19, 20 are perspective views illustrating the other embodiments of the cabinet.

## **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

Referring to the drawings, and initially to FIGS. 1-10, a cabinet  
25    in accordance with the present invention comprises two side plates 10 each including a front and a rear posts 11, 12 each defined by a first panel 13 perpendicular to the side plates 10 and a second panel

14 extended from the first panel 13 and parallel to the side plates 10. Each of the rear posts 12 of the side plates 10 includes one or more grooves 15 formed therein, and preferably formed between the first and the second panels 13, 14 (FIGS. 2-4).

5        Each of the first panels 13 of the front and the rear posts 11, 12 includes a number of slots 16 formed therein to receive or support a number of hooks 17 respectively. One or more shelves 18 may be optionally or selectively engaged onto the hooks 17 which may thus support the shelves 18 between the front and the rear posts 11, 12 of  
10 the side plates 10, and thus between the side plates 10, in order to support various objects on the shelves 18. Each of the side plates 10 includes an upwardly extended upper flange 19.

Two front and lateral beams 20 each includes two extensions 21 extended from the ends thereof respectively, and engaged with  
15 and secured to the first panels 13 of the front posts 11 with fasteners 22 or the like, so as to secure the beams 20 between the upper and the lower portions of the front portions of the side plates 10 (FIG. 3) respectively. The lower beam 20 includes a fence 23 extended upwardly from the rear portion thereof. A track 24 is secured on the  
20 lower beam 20 to slidably support two door panels 25. Alternatively, the door panels 25 may be pivotally secured to the front portion of the side plates 10 (FIG. 20).

One or more, such as two rear plates 30 each includes one or more ears 31 extended therefrom, for engaging into the grooves 15  
25 of the rear posts 12 of the side plates 10, in order to latch or secure the rear plates 30 between the side plates 10. One of the rear plates 30 includes a board 33 extended therefrom and engageable onto one

side or an inner side portion 32 of the other rear plate 30, and a hook 34 extended from the board 33 and engaged with the inner side portion 32 of the other rear plate 30, to hook and secure the rear plates 30 together (FIGS. 4-6).

5        Each of the side plates 10 and the rear plates 30 includes a lower portion having a flap 35 secured thereto. For example, each of the flaps 35 includes a lower segment 36 secured to the lower portion of the respective side and the rear plates 10, 30, so as to form or define a channel 37 between the flap 35 and the respective  
10    side and the rear plates 10, 30. Each of the flaps 35 includes one or more openings 38 formed therein. Each of the rear plates 30 includes a lever 39 provided on top thereof.

      A bottom plate 40 includes four flanges 41, such as two side flanges 41 and a front and a rear flanges 41 extended downwardly  
15    from the four sides thereof respectively, and engaged into the channels 37 defined between the respective flaps 35 and the side and the rear plates 10, 30, such that the bottom plate 40 may be easily and quickly secured between the side and the rear plates 10, 30. It is preferable that each of the four flanges 41 of the bottom  
20    plate 40 includes one or more catches 42 (FIG. 9) extended therefrom and engaged into the openings 38 of the flaps 35, to further solidly secure the bottom plate 40 between the side and the rear plates 10.

      The bottom plate 40 includes four corner notches 43 formed  
25    therein to receive the front and the rear posts 11, 12 respectively, and another notch 44 formed therein to receive the board 33 and the hook 34 of the rear plates 30, best shown in FIG. 7. It is preferable

that the bottom plate 40 includes one or more reinforcing stays 46 (FIG. 8) secured to the bottom thereof, to reinforce the bottom plate 40 and to prevent the bottom plate 40 from being deformed by the objects supported on the bottom plate 40.

5       An upper plate 60 includes two side slits 61 formed therein to receive the upwardly extended upper flanges 19 of the side plates 10, and thus to latch and secure the upper plate 60 onto the side plates 10. The upper plate 60 includes one or more, such as two flaps 62 extended downwardly from the rear portion thereof, each to form or  
10       define a space 63 therein (FIG. 10), and to receive the levers 39 of the rear plates 30, and to further solidly secure the levers 39 of the rear plates 30 to the flaps 62 of the upper plate 60 with one or more fasteners 64 (FIGS. 8, 10).

As shown in FIGS. 3-7, a number of pads or stops 66 each  
15       includes a pin 67 extended therefrom and engaged into the upper portions of the respective panels 14 of the front posts 11, and engageable with the upper beam 20 and/or the upper plate 60, in order to solidly support the upper beam 20 and/or the front portion of the upper plate 60 on the front posts 11. As shown in FIGS. 1, 2,  
20       6, 8, the upper plate 60 may include a front flange 68 extended downwardly from the front portion thereof, to engage with and/or to cover or shield the upper beam 20.

As shown in FIGS. 11-18, illustrated is the other arrangement of the cabinet. The side plates 10 and/or the rear plates 30 may each  
25       include one or more catches 70 extended from the upper portion thereof, and the upper plate 60 may include a number of downwardly extended flaps 62 each having one or more openings 65

formed therein (FIGS. 13, 14) to receive the catches 70 and to latch and secure the upper plate 60 to the side and the rear plates 10, 30.

The front flange 68 of the upper plate 60 may include a cavity 69 formed therein to receive a lock 71 therein. The side and the rear  
5 plates 10, 30 may be solidly secured together with a hooking structure 72, best shown in FIGS. 12-15. As shown in FIG. 16, four angles 73 may be secured to the corners of the side and the rear plates 10, 30, and/or the bottom plate, in order to maintain the cabinet in the parallelepiped structure.

10 Two poles 26 may further be provided and secured between the beams 20, and each of the poles 26 may include one or more orifices 27 formed therein. A column 28 is attached to one of the poles 26, and includes one or more pegs 29 extended therefrom and engaged through the orifices 27 of the one pole 26.

15 As shown in FIGS. 12 and 17-18, one or more pairs of rails 74 may further be provided and secured to the side plates 10, or each may include one or more hooks 75 provided on one end thereof to engage into the orifices 27 of the other pole 26, and a key 76 extended from the other end thereof, to engage into the  
20 corresponding slots 77 of the rear plates 30 and/or the side plates 10, and to secure the rails 74 to the side plates 10 and/or the rear plates 30. One or more pairs of sliding members 78 are slidably received in the rails 74 respectively to support one or more drawers 80 within the cabinet.

25 Each of the drawers 80 may include a bottom board 81, two side boards 82, a front board 83 and a rear board 84 secured together with such as engagements of tongues 85 and slots 86



thereof, and/or fasteners, or the like, and may further include an inner board 87 secured to the front board 83 with fasteners or the like. The drawers 80 may be secured to the sliding members 78, in order to be slidably secured to the rails 74. The lock 71 may be used  
5 to lock the drawers 80 to the side plates 10 and/or the upper plate 60.

The cabinet may be arranged to various structures, and may include, for example, a single story having two sliding door panels 25, as shown in FIG. 1, or having two pivotal or openable door  
10 panels 25, as shown in FIG. 20; or may include one or more stories each having a drawer 80 slidably received therein (FIG. 11); or may include two or more stories each having two pivotal or openable door panels 25 or each having two sliding door panels 25, as shown in FIG. 19.

15 Accordingly, the cabinet in accordance with the present invention includes a structure to be easily assembled by the users themselves, to allow the cabinet to be disassembled to compact folding structure or a compact volume that is excellent for storing and transportation purposes.

20 Although this invention has been described with a certain degree of particularity, it is to be understood that the present disclosure has been made by way of example only and that numerous changes in the detailed construction and the combination and arrangement of parts may be resorted to without departing from  
25 the spirit and scope of the invention as hereinafter claimed.